

SYNONYMICAL NOTES ON THE GENUS *CERCERIS*—II<sup>1</sup>

(Hymenoptera: Sphecidae)

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Studies of type material leading to the publication of a review of the genus *Cerceris* for North America north of Mexico has revealed synonymy in several species of the genus. As there will be some natural delay in the publication of such an extensive paper, it is considered advisable to place on record the present known synonymy. A synonymical note is also included on a species from the Philippine Islands and Formosa.

*CERCERIS ACANTHOPHILA* Cockerell*Cerceris acanthophila* Cockerell, 1897. Entomologist 30:135. Male.*Cerceris minax* Mickel, 1917. Univ. Nebr. Studies, 17:339. Female. male.

(New synonymy.)

*Cerceris huachuca* Banks, 1947. Psyche 54:29. Male. (New synonymy.)

Type No. 10038 at Philadelphia Academy of Natural Sciences and Type No. 3409 at the U.S.N.M. are both labeled "Type, *Cerceris acanthophila* Cockerell." The holotype female and the allotype male of *C. minax* Mickel are at Nebraska University. The holotype male of *C. huachuca* Banks is at the Museum of Comparative Zoology, (No. 27636).

*CERCERIS CALIFORNICA* Cresson*Cerceris californica* Cresson. 1865. Ent. Soc. Phil., Proc., 5:128. Male.*Cerceris ferruginior* Viereck and Cockerell, 1904. N.Y. Ent. Soc., Jour. 12:134. Male. (New synonymy.)*Cerceris garciana* Viereck and Cockerell, 1904. N.Y. Ent. Soc., Jour. 12:135. Male. (New synonymy.)*Cerceris populorum* Viereck and Cockerell, 1904. N.Y. Ent. Soc., Jour. 12:135. Male. (New synonymy.)*Cerceris argyrotricha* Rohwer, 1908. Canad. Ent. 40:324. Female. (New synonymy.)*Cerceris cognata* Mickel, 1916. Amer. Ent. Soc., Trans. 42:408. Female. (New synonymy.)*Cerceris denticularis* Banks, 1917. Harvard Univ., Mus. Comp. Zool., Bull. 61:113. Female, male. (New synonymy.)*Cerceris interjecta* Banks, 1919. Canad. Ent. 51:84. Male. (New synonymy.)*Cerceris arno* Banks, 1947. Psyche 54:19. Female. (New synonymy.)

<sup>1</sup>A grant from the National Science Foundation made it possible to spend some time during the fall of 1958 studying types of Cercerini at several eastern institutions. The present notes being published are based, in part, on these studies. Grants for General Research administered by the Graduate School, Oregon State College, have also assisted in these studies. Published with the approval of the Monographs Publication Committee, Oregon State College. Research paper No. 370, Department of Entomology.

*Cerceris illota* Banks, 1947. Psyche 54:23. Male. (New synonymy.)

*Cerceris isolde* Banks, 1947. Psyche 54:24. Male. (New synonymy.)

This extremely variable species was first described by Cresson from a male of the darker form which is more common in the northern range of the species. In the lighter forms the black changes to an amber or light amber. The lighter forms gradually replace the darker ones in the south so that in the southwestern desert area only the very light forms are found. The southwestern forms also show a tendency to have a considerable red on the proximal segments of the abdomen. A wide variation may be found in a single colony as was shown in collections made by Linsley and MacSwain. (Ann. Ent. Soc. Am. 49:71-84, 1956.) As a result of this wide variation numerous species have been described by different workers where a limited number of specimens was available for study. However, the present writer, after examining many hundreds of specimens from throughout the range, must consider them all the same species. Further studies may show it desirable to recognize two or more subspecies.

The holotype male of *C. californica* Cresson is at the Philadelphia Academy of Natural Sciences, (No. 1953). As indicated, it is one of the darker forms. The holotype male of *C. ferruginior* Viereck and Cockerell is at the Philadelphia Academy, (No. 10378). It is one of the medium forms. The holotype male of *C. garciana* Viereck and Cockerell is also at the Philadelphia Academy, (No. 10380). It is somewhat medium in its coloration. The holotype male of *C. populorum* Viereck and Cockerell is at the Philadelphia Academy, (No. 10385). It, also, is somewhat medium in its colors. The holotype female of *C. argyrotricha* Rohwer is at the U. S. National Museum, (No. 28485). It is one of the medium forms. The holotype female of *C. cognata* Mickel is at the University of Nebraska. It is one of the black and yellow forms and is from Colorado. Several type females and males of *C. denticularis* Banks are at the Museum of Comparative Zoology, (No. 10028) and are black and yellow forms from the northwest. The holotype male of *C. interjecta* Banks is at the Museum of Comparative Zoology, (No. 13767). It is a medium dark form with some red showing on the first tergite. The holotype female of *Cerceris arno* Banks is at the Museum of Comparative Zoology, (No. 23542). This is an extreme light form. The holotype male of *C. illota* Banks is at the Museum of Comparative Zoology, (No.

23541). It is medium in its colors. The holotype male of *C. isolde* Banks is at the Museum of Comparative Zoology, (No. 23540). It is an example of the extreme light form.

#### CERCERIS CLYPEATA Dahlbom

*Cerceris clypeata* Dahlbom, 1845. Hym. Europaea, v. 1, pp. 221, 500. Female, male.

*Cerceris imitator* Cresson, 1865. Ent. Soc. Phil., Proc. 5:125. Male. Preocc. (New synonymy.)

*Cerceris imitatoria* Schletterer, 1887. Zool. Jahrb., Ztschr. f. System. 2:494. New name for *C. imitator* Cresson.

*Cerceris zobeide* Brimley, 1929. Ent. News 40:194. Male. (New synonymy.)

*Cerceris zosma* Brimley, 1929. Ent. News 40:195. Female. (New synonymy.)

The holotype female and allotype male of *C. clypeata* Dahlbom are at the Universitetets Zoologiska Institution, Lund, Sweden. A note relative to these types was published by the writer in 1949 (Pan-Pac. Ent. 25:70). The holotype male of *C. imitator* Cresson is at the Philadelphia Academy of Natural Sciences, (No. 1951). The holotype male of *C. zobeide* Brimley and the holotype female of *C. zosma* Brimley are both at the North Carolina State Department of Agriculture, Raleigh, N.C.

#### CERCERIS COMPACTA Cresson

*Cerceris compacta* Cresson, 1865. Ent. Soc. Phil., Proc. 5:127. Female, male.

*Cerceris solidaginis* Rohwer, 1908. Canad. Ent. 40:323. Male. (New synonymy.)

*Cerceris belfragei* Banks, 1917. Harvard University, Mus. Compar. Zool., Bull. 61:114. Female, male. (New synonymy.)

The holotype female (No. 1940.1) and the allotype male of *C. compacta* Cresson are at the Philadelphia Academy of Natural Sciences. The holotype male of *C. solidaginis* Rohwer is at the U. S. National Museum (No. 28486). The holotype female (No. 10029) and the allotype male of *C. belfragei* Banks are at the Museum of Comparative Zoology.

#### CERCERIS COMPAR Cresson

*Cerceris compar* Cresson, 1865. Ent. Soc. Phil., Proc. 5:126. Male.

*Cerceris zelica* Banks, 1912. Ent. Soc. Amer., Ann. 5:23. Male, female. (New synonymy.)

*Cerceris catawba* Banks, 1912. Ent. Soc. Amer., Ann. 5:25. Female, male. (New synonymy.)

The holotype male of *C. compar* Cresson is at the Philadelphia Academy of Natural Sciences, (No. 1949). The holotype female (No. 13787) and allotype male of *C. catawba* Banks as well as the

holotype female (No. 13773) and allotype male of *C. zelica* Banks are at the Museum of Comparative Zoology.

#### CERCERIS FEMURRUBRUM Viereck and Cockerell

*Cerceris femurrubrum* Viereck and Cockerell, 1904. N.Y. Ent. Soc., Jour. 12:135. Male.

*Cerceris athene* Banks, 1947. Psyche 54:20. Female. (New synonymy.)

The holotype male of *C. femurrubrum* Viereck and Cockerell is at the Philadelphia Academy of Natural Sciences, (No. 10040). The holotype female of *C. athene* Banks is at the Museum of Comparative Zoology, (No. 23537). As indicated in the Synoptic Catalog, Hymenoptera of America North of Mexico, the writer considered *C. athene* Banks the possible female of *C. femurrubrum* Viereck and Cockerell. They have often been collected in the same location. In 1956 M. S. Wasbauer made some biological observations of *C. athene* Banks found nesting at Mecca, Riverside County, California. From his observations and collections it was shown that *C. athene* Banks is the female of *C. femurrubrum* Viereck and Cockerell. (Wasbauer, Pan-Pacific Ent. 33:131, 1957.)

#### CERCERIS GNARA Cresson

*Cerceris gnara* Cresson, 1872. Amer. Ent. Soc., Trans. 4:229. Male.

*Cerceris firma* Cresson, 1872. Amer. Ent. Soc., Trans. 4:229. Female. (New synonymy.)

The holotype male of *C. gnara* Cresson (No. 1938) and the holotype female of *C. firma* Cresson (No. 1945.1) are at the Philadelphia Academy of Natural Sciences.

#### CERCERIS HALONE Banks

*Cerceris halone* Banks, 1912. Ent. Soc. Amer., Ann. 5:24. Female.

*Cerceris architis* Mickel, 1916. Amer. Ent. Soc., Trans. 42:409. Female. (New synonymy.)

*Cerceris salome* Banks, 1923. Canad. Ent. 55:21. Female. (New synonymy.)

*Cerceris shermani* Brimley, 1928. Elisha Mitchell Sci. Jour. 43:200. Female. (New synonymy.)

The holotype female of *C. halone* Banks is at the Museum of Comparative Zoology, (No. 13777). The holotype female of *C. architis* Mickel is at the University of Nebraska. The holotype female of *C. salome* Banks is at the Museum of Comparative Zoology, (No. 14705). The holotype female of *C. shermani* Brimley is at the North Carolina State Department of Agriculture, Raleigh, N.C.



## CERCERIS NIGRESCENS F. Smith

*Cerceris nigrescens* F. Smith, 1856. Cat. Hym. Brit. Mus. 4:466. Female.

*Cerceris munda* Mickel, 1917. Nebr. Univ. Studies. 17:337. Female, male.

(New synonymy.)

The holotype female of *C. nigrescens* F. Smith is in the British Museum (Natural History). The holotype female and allotype male of *C. munda* Mickel are at the University of Nebraska. *C. nigrescens* F. Smith shows a tendency to have the light markings more yellow as one goes south in the western states. *C. munda*, which was taken at Sacramento, Calif., is a yellow form of *C. nigrescens*. Mating pairs have been taken in southern Oregon where one sex is the lighter form and the other the more yellow form. It is possible a subspecies difference should be recognized.

## CERCERIS SEXTA Say

*Cerceris sexta* Say, 1837. Boston Jour. Nat. Hist. 1:382. Male.

*Cerceris biungulata* Cresson, 1865. Ent. Soc. Phil., Proc. 5:118. Female.

(New synonymy.)

The type of *C. sexta* Say has been lost. The writer bases his recognition of the species on material named by E. T. Cresson, Sr. The holotype female of *C. biungulata* Cresson is at the Philadelphia Academy of Natural Sciences, (No. 1956). Cresson (1865, p. 120) makes this statement relative to *C. sexta* Say and *C. biungulata* Cresson: "May possibly be the male of the preceding species." From a study of material available, the present writer concurs in this opinion. Banks (Psyche 54:10, 1947) also intimates these are synonymous.

*C. sexta* Say is very close to *C. sextoides* Banks of the Pacific Coast states and *C. stigmosalis* Banks of the western plains states.

## CERCERIS STIGMOSALIS Banks

*Cerceris stigmosalis* Banks, 1916. Ent. News 27:64. Male.

*Cerceris fugatrix* Mickel, 1917. Nebr. Univ. Studies 17:335. Male. (New synonymy.)

*Cerceris sayi* Banks, 1923. Canad. Ent. 55:21. Female, male. (New synonymy.)

*Cerceris stevensi* Banks, 1923. Canad. Ent. 55:22. Female. (New synonymy.)

The holotype male (No. 13778) of *C. stigmosalis* Banks, the holotype female (No. 14706) and the allotype male of *C. sayi* Banks and the holotype female (No. 14707) of *C. stevensi* Banks are all at the Museum of Comparative Zoology. The holotype male of *C. fugatrix* Mickel is at the University of Nebraska. As indicated above, this species is very close to *C. sexta* Say. On October 1, 1957,

the author collected several specimens of *C. stigmosalis* Banks at San Luis Potosi, S.L.P., Mexico, 7300 ft. elevation, on *Baccharis* sp. The species is not otherwise recorded south of Mitchell, Nebraska. It extends north into Alberta, Canada.

#### CERCERIS VANDUZEEI Banks

*Cerceris vanduzeei* Banks, 1917. Harvard Univ. Mus., Compar. Zool., Bull. 61:114. Female.

*Cerceris complanata* Mickel, 1917. Nebr. Univ. Studies 17:340. Female, male. (New synonymy.)

The holotype female of *C. vanduzeei* Banks is at the Museum of Comparative Zoology, (No. 10030). The holotype female and allotype male of *C. complanata* Mickel are at the University of Nebraska.

#### CERCERIS FINITIMA subspecies VIERECKI Banks (New status)

*Cerceris vierecki* Banks, 1947. Psyche 54:30. Female.

The holotype female of *C. vierecki* Banks is at the Museum of Comparative Zoology, (No. 23544). The markings on *C. f. vierecki* Banks are a creamy white and not yellow as in *C. f. finitima* Cresson. The former takes over as the usual form in the southwest desert area.

#### CERCERIS FRONTATA subspecies RAUI Rohwer (New status)

*Cerceris rauli* Rohwer, 1920. U.S. Nat. Mus., Proc. 57:230. Female, male.

The holotype female (No. 21610) and allotype male of *C. rauli* Rohwer are at the U. S. National Museum. *C. f. rauli* Rohwer is much darker than *C. f. frontata* Say and so far has been seen only from the extreme northeastern part of the range from eastern Texas and Oklahoma to southern Illinois.

#### CERCERIS LUZONENSIS Crawford

*Cerceris luzonensis* Crawford, 1910. U.S. Nat. Mus., Proc. 38:120. Male. Philippine Islands.

*Cerceris fukaii* Rohwer, 1911. U.S. Nat. Mus., Proc. 39:482. Male. (Cat. No. 13377.) Horisha, Formosa. (New synonymy.)

This synonymy was discovered while working over types at the U. S. National Museum. The male types of both species are at that institution. The type No. of *C. luzonensis* Crawford is 12887, and the type No. of *C. fukaii* Rohwer is 13377.

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